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Further Notes on Geographical Forms of the Chalcosiine Moth *Eterusia aedea* (Lepidoptera, Zygaenidae)

By

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大和田　守[1]：再びオキナワルリチラシの地理的変異について

The zygaenid moth *Eterusia aedea* (Clerck, 1759) is widely distributed from Japan, through China and Indo-China, the Himalayas, India to Sri Lanka. In the Japanese Islands, this moth is distributed in the warm temperate zone, that is, from Yugashima (eastern most) in the Izu Peninsula, the Oki Islands (northernmost) on the Sea of Japan, through the Pacific coast of the Tokai District, the Kii Peninsula, western part of the Chugoku District in Honshu, Shikoku, Tsushima and Kyushu, to the Ryukyu Islands (Fig. 1).

Although it is well known that the wing maculation of the Himalayan and Southeast Asian subspecies, *E. aedea edocla* Doubleday, 1847 is markedly polymorphic, Japanese populations are not so variable and separated into several subspecies, particularly in the Ryukyu Islands. I revised those subspecies by examination of the type specimens (Owada, 1989), though leaving some problems to be solved. In this paper, I will revise those subspecies again based on further material secured in the last decade, with notes on some ecological and experimental data, that is, flying time of moths in a day, circadian rhythm, etc., and will describe three new subspecies from Nakanoshima Is., the Tokara Group of the northern Ryukyus, from Tokunoshima Is., the central Ryukyus, and from Kumejima Is., the central Ryukyus.

The specimens recorded in this paper are preserved in the collection of the National Science Museum, Tokyo, unless stated otherwise. Synonyms and references of *Eterusia aedea* subspecies are enumerated in my previous papers (Owada, 1989, 1998, 2000), and the specimens recorded in those papers are omitted in this article. Measurement of reared specimens is not recorded in this study, because their size is changed under the reared condition, i.e., temperature, humidity, diapause or not, food plant, etc.

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Eterusia aedea sugitanii Matsumura, 1927

(Figs. 2–8)

Eterusia aedea virescens: Ezaki, 1917, p. 83, fig. 4 (male), nec Butler, 1881.

Eterusia aedea sugitanii Matsumura, 1927, p. 83, pl. 3, fig. 9 (male); Owada, 1989, pp. 200–201, figs. 1–3 (male and female), 21–22 (male genitalia), 34–35 (female genitalia), references; Owada, 1998, pp. 7–12, figs 2–7.

Eterusia aedea f. *sugitanii*: Matsumura, 1931, p. 987, fig. (male).

Eterusia aedea okinoshimensis Esaki et Inoue, 1956, p. 133, figs 2–6 (type series, male and female); Inoue, 1982, 2: 217, synonymy with *sugitanii*; Owada, 1998, pp. 7–12, figs 2–7 (type series), synonymy.

Distribution. Honshu (Izu Peninsula, Aichi, Mie, Wakayama, Nara, Hiroshima, Shimane and Yamaguchi), Oki Islands, Shikoku, Tsushima, Okinoshima Is. (Chikuzen = Fukuoka), and Kyushu.

Material examined. Holotype, male, of *Eterusia aedea sugitanii* Matsumura, 1927 was examined (Owada, 1989), in ELHU. Type series of *Eterusia aedea okinoshimensis* Esaki et Inoue, 1956 was examined (Owada, 1998), in ELKU. Honshu:— Shizuoka Pref., Izu Peninsula, Yugashima, 300m, 6 ♂, 5. IX. 1991, H. Kobayashi leg., 2 larvae collected from *Eurya japonica*, 15. IV. 1995, M. Owada & T. Miyata leg., em. 2 ♀, 12–13. VII. 1995; Aichi Pref., Horai, Mt. Urenyama, 1 ♂, 2. IX. 1988, Y. Yanagita leg.; Mie Pref., Miyama, Choshigawa Riv., 150m, 3 ♂, 29. VIII. 1992, 2 ♂, 19. IX. 1992, M. Owada leg., 1 ♀, 15. IX. 1993, Y. Koyama leg., ova 16. IX. 1993, em. 10 ♂ 8 ♀, 18–24. XII. 1993, second gen., ova 10–20. I. 1994, em. 22 ♂ 24 ♀, 21. IV.–13. VI. 1994; Wakayama Pref., Mt. Oto-san, Osugi-Kurozo, 6 ♂, 13. VIII. 1986, I. Matoba leg., NHMW, 1 ♂, 19. VIII. 1981, S. Gotoh leg., Susami, Samoto, 1 ♂, 19. IX. 1981, S. Gotoh leg., NHMW, Tanabe, 1 ♂, 9. IX. 1990, S. Gotoh leg.; Nara Pref., Mt. Kasuga, near Nara, 1 ♂, 25.VIII.1921, I. Sugitani leg., ELKU; Shimane Pref., Hikimi, Sumigawa, 4 ♂, IX. 1999, M. Yamada leg. Shikoku:— Ehime Pref., Kita-uwa, Umeganarutoge, 3 ♂, 23. VIII. 1979, K. Numaguchi leg., ELEU; Shibukusa, 1 ♂, 14. VIII. 1952, T. Kusunoki leg., ELKU;

Kochi Pref., Naka-Tosa, Kure, 5 ♂, 3. X. 1994, H. Hamaji leg., Muroto, Hane, 3 ♂, 28. IX. 1991, M. Yamamoto leg., Nakamura, Gudo, 1 ♂, 26. IX. 1990, S. Suda leg., Tosashimizu, Otani, 1 ♂, 14. VI. 1972, Noda leg. Kyushu:— Fukuoka Pref., Mt. Sarakurayama, 3 ♂, 27. VIII. 1997, K. Ueda leg., KNHM; Saga Pref., Tosu, Mt. Kusenbusan, 4 ♂, 7. X. 1991, T. Ichiba leg., Taradake Mts., Taranakayama, 540m, 2 ♂, 27. VIII. 1994, M. Furukawa leg. ; Nagasaki Pref., Omura, Kuroki, 350m, 2 ♂, 31. VIII. 1995, 2 ♂, 24–25. IX. 1995, K. Sibahara leg., Takaki, Mt. Gokaharadake, 700–750m, 5 ♂, 14. IX. 1993, Y. & K. Sibahara leg. ; Oita Pref., Nakatsue, Matsubara-dam, 270m, 2 ♂, 16. IX. 1991, Y. Yanagita leg. ; Kumamoto Pref., Tomochi, Midorikawa-dam, 2 ♂, 11. IX. 1990, 1 ♂, 22.IX.1990, M. Furukawa leg., Saiwa, Midorikawa, 1 ♂, 15–16. VIII. 1993, M. Furukawa leg., Yabe, Naidaijin, 2 ♂, 17. VIII. 1991, M. Furukawa leg., Itsuki, Hirase, 400m, 24. VIII. 1991, Y. Yanagita leg.; Miyazaki Pref., Kirishima Mts., Mt. Shiratori, 1,000m, 4 ♂, 30. VIII. 1991, Y. Yanagita leg., Shiratori-onsen, 900m, 24 ♂, 4. IX. 1992, Y. Yanagita leg., Takachiho, Hinokage, 1 ♂, 8. IX. 1992, Y. Yanagita leg., Suki, Kireitoge, 850m, 11 ♀, 12. IX. 1991, Y. Yanagita leg., 24 ♂ 1 ♀, 6. IX. 1992, M. Owada leg., ova on 10–18. IX. 1992, em. 76 ♂ 74 ♀, 31. XII. 1992–19. I. 1993; Kagoshima Pref., Mt. Kurinodake, 720m, 1 ♀, 5. IX. 1992, K. Matsuda leg., Miyakonojo, Tobi, 450m, 3 ♂, 4. IX. 1991, Y. Yanagita leg., Satamisaki, Hetsuka, 600m, 2 ♂, 7. IX. 1992, Y. Yanagita leg., 1 male, Kagoshima, Shibushi-fukin, 1 ♂, IX–X. 1944, T. Shirôzu leg., ELKU.

Notes. Variation of local populations of the subspecies *sugitanii* is briefly discussed in my previous papers (Owada, 1998, 2000). Although some features overlap between populations, this subspecies can be divided into the following subgroups:

1) Izu Peninsula (Figs. 2–3).

Largest moth (length of male forewing: 33–38 mm). In male and female, white bands of forewing and median band of hindwing rather broad, discocellular mark rather small.

2) Kii Peninsula, Aichi and Shikoku (Figs. 4–5).

Small moth (length of forewing 27–34 mm in male, 32 mm in female). In male and female, white bands of forewing and median band of hindwing narrow, discocellular mark small.

3) Hiroshima (Fig. 8).

Melanic moth (length of male forewing: 29–33 mm) (Owada, 2000).

4) Oki Islands, Shimane, Okinoshima Is. (Fukuoka) and Tsushima.

Large moth (length of forewing 29–34 mm in male, 28–34 mm in female). In male and female, white bands of forewing and median band of hindwing very broad, discocellular mark large.

5) Kyushu and Yamaguchi (Figs. 6–7).

Large moth (length of forewing 30–34 mm in male, 32–35 mm in female). In male and female, white bands of forewing and median band of hindwing rather broad, discocellular mark very large.

Life cycle. Univoltine. Hibernates in a young larval stage at Yugashima, the Izu Peninsula, and Aichi and Mie (Nishihara, 1992).

Photoperiodism. Mature larvae diapause at 25°C in along daylength condition (14L10D) (Miyata, unpublished) in their cocoons.

Diurnal activity in adults. Males are well attracted to light traps, while females are scarce. Females and males were rarely collected on such a white small cluster flowers as *Fagopyrum esculentum*. I have never seen the moth flying in the daytime.

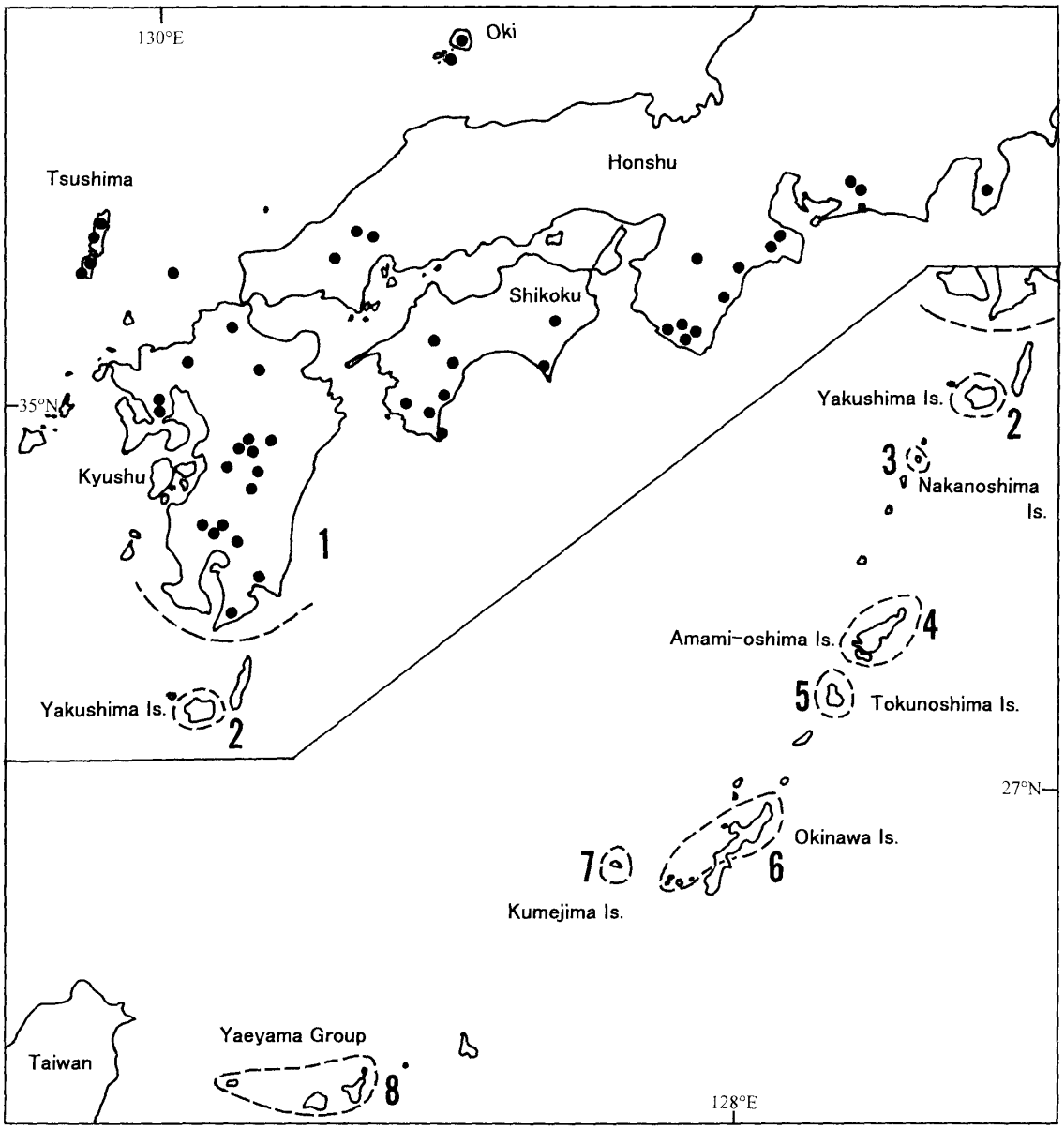


Fig. 1. Distribution map of *Eterusia aedea* subspecies in Japan. 1, Subsp. *sugitanii*, black plots; 2, subsp. *micromaculata*; 3, subsp. *masatakasatoi*; 4, subsp. *tomokunii*; 5, subsp. *hamajii*; 6, subsp. *sakaguchii*; 7, subsp. *azumai*; 8, subsp. *okinawana*.

Eterusia aedea micromaculata Inoue, 1982
(Figs. 9–10)

Eterusia aedea okinawana: Inoue, 1955, p. 203, part. Nec Matsumura, 1931.

Eterusia aedea micromaculata Inoue, 1982, **1**: 292, **2**: 217, pl. 33, figs. 6–7; Owada, 1989, p. 201, figs. 5–6 (male and female), 24 (male genitalia), 37 (female genitalia).

Distribution. Yakushima Island, off Kagoshima of Kyushu.

Material examined. Type series of *Eterusia aedea micromaculata* Inoue, 1982 was examined

(Owada, 1989), the holotype and paratypes in BMNH, four male and one female paratypes in NSMT . Yakushima Is.:— Miyanoura, 1 ♂, 22.IX.1975, Y. Arita leg., Miyanoura, Shiratani, 400–600m, 19 ♂, 1–3.VII.1994, 22 ♂, 14–16.X.1993, M. Owada leg., same loc., 600m, 4 larvae from *Eurya japonica*, 26.XII.1995, M. Owada leg., em. 1 ♂, 28.II.1996, 3 ♀, 6.III., 13.IV., 5.IV.1996.

Notes. Small moth (length of forewing 25–30 mm in male, 32 mm in female). Though Inoue (1982) characterized this subspecies by the small discocellular mark on the forewing, this character state is variable. The outer band of male forewing is reduced in some specimens.

Life cycle. Bivoltine. Four young larvae (ca. 3mm) were collected at the end of December on *Eurya japonica* at Shiratani, Yakushima Island.

Photoperiodism. Not studied.

Diurnal activity in adults. Males are well attracted to light traps. I observed several moths flying over tree crowns. These moths flied very slow, and never rested on some leaves or twigs. Therefore, they all could be males, searching for females. Females are hardly attracted by light traps, and collected in the daytime.

Eterusia aedea masatakasatoi Owada, **subsp. nov.**
(Figs. 11–12)

Eterusia aedea okinawana (sensu Inoue, 1955): Arita, 1962, p. 32.
Eterusia aedea okinawana: Inoue, 1982, **1**: 292, part.
Eterusia aedea micromaculata: Owada, 1989, pp. 201–202, part.
Eterusia aedea subsp.: Owada *et al*., [1995] for 1994, p. 205, figs. 3–4.

Distribution. Nakanoshima Island (the Tokara Group), the northern Ryukyus.

Type series. Holotype, 1 ♂, Japan, Ryukyus, Tokara Group, Nakanoshima Is., Nanatsuyama, 100m, M. Owada leg., ova on 28–30. X. 1992, em. 12. I. 1993. Paratypes:— Nakanoshima Is., 3 ♂, 23–29. V. 1962, M. Satô leg., Nakanoshima Is., SE of Mt. Otake, 330m, 17 ♂, 14. VI. 1993, E of Mt. Otake, 220m, 14 ♂, 15. VI. 1993, same locality, 1 ♂, 24. X. 1992, M. Owada leg., Nakanoshima Is., Nanatsuyama, 100m, 2 ♀, 15–16. VI. 1993, 1 ♀, 26. X. 1992, M. Owada leg., same data as holotype, 11 ♂ 16 ♀, em. on 8–19. I. 1993.

The holotype and paratypes are preserved in the National Science Museum, Tokyo.

Diagnosis. Similar to subsp. *micromaculata* from Yakushima Is. Larger (length of forewing 26–30 mm in male, 35–37 mm in female). Ground colour of forewing moss-green, paler than that of *micromaculata*; outer band of forewing broader; discocellular mark larger; median white band of hindwing broader.

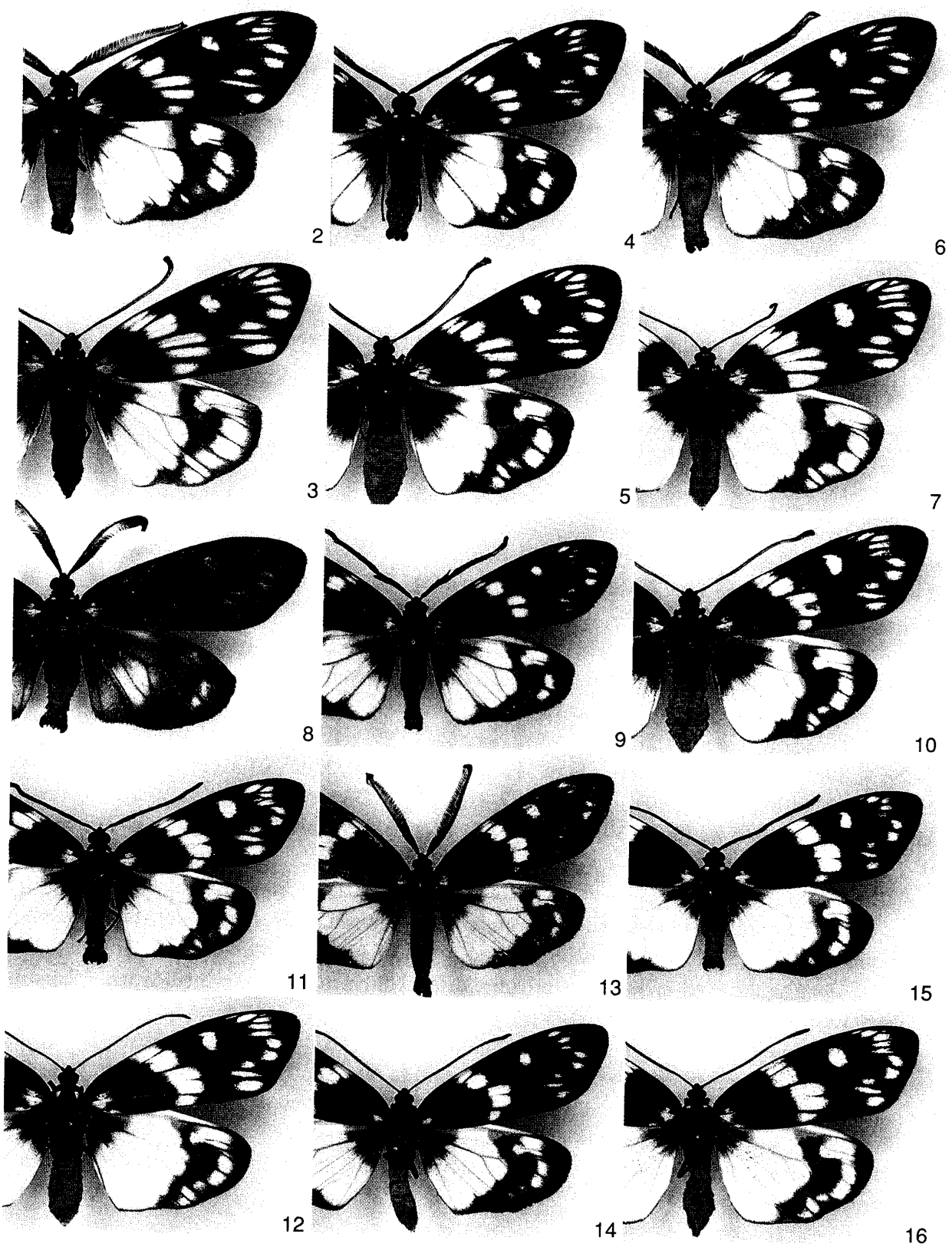
Notes. Inoue (1982) included this population in subsp. *okinawana* (sensu Inoue, 1982, nec Matsumura, 1931). I transferred it to subsp. *micromaculata* (Owada, 1989), and then pointed out that the population of Nakanoshima Island was different not only from that of Amami-oshima Island, but also from that of Yakushima Island (Owada *et al*., [1995]).

Three males of this population were first collected by Dr. M. Satô, to whom this subspecies is dedicated.

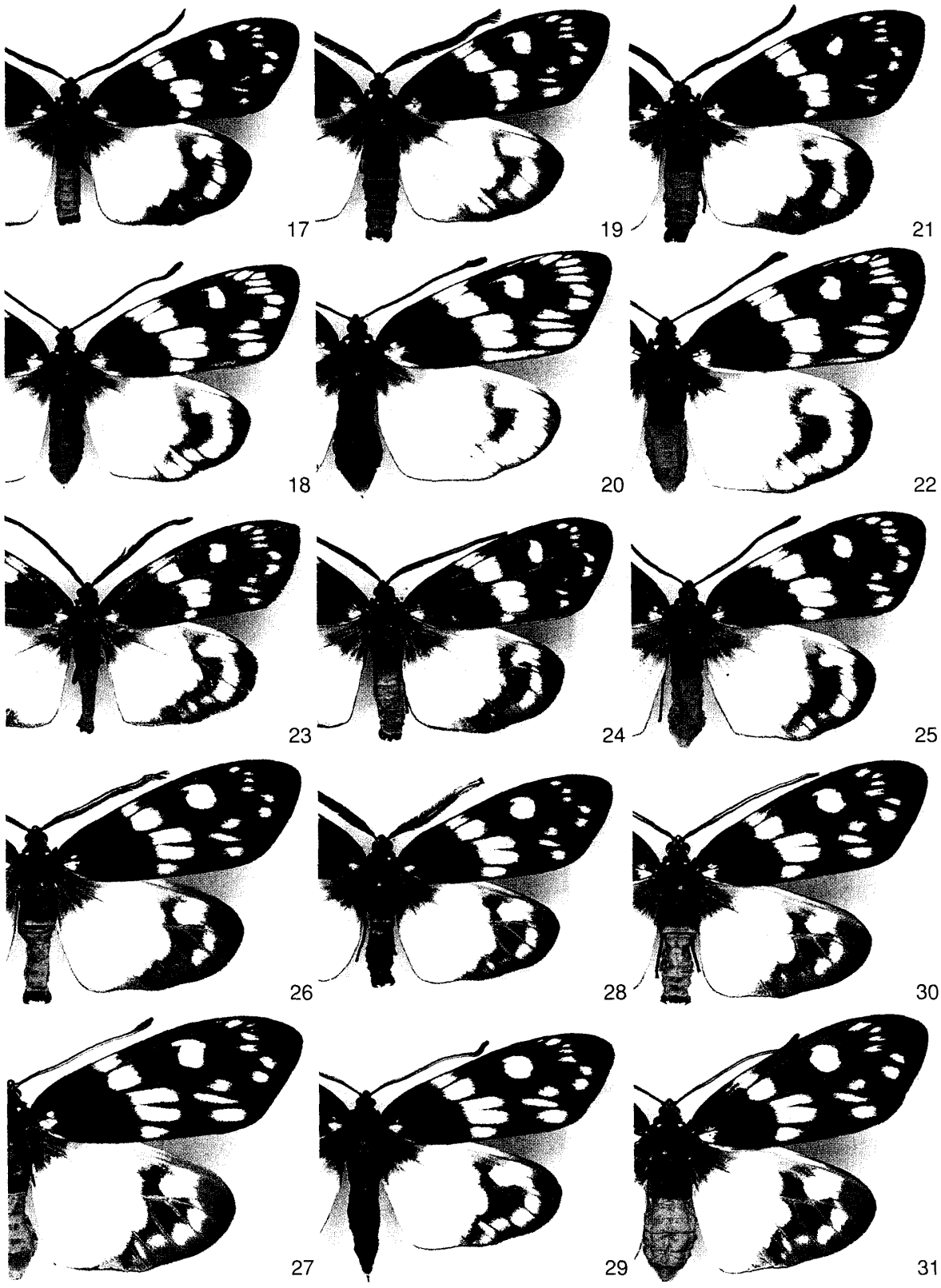
Life cycle. Bivoltine.

Photoperiodism. Not studied.

Diurnal activity in adults. Males are well attracted to light traps. I collected three females at



Figs. 2–16. *Eterusia aedea* subspecies in Japan. 2–8, Subsp. *sugitanii*, 2–3, Yugashima, Izu Pen., ♂♀, 4–5, Miyama, Kii Pen., ♂♀, 6–7, Kirei-toge, Kyushu, ♂♀, 8, Hiroshima, melanic form, ♂; 9–10, subsp. *micromaculata*, Yakushima Is., ♂♀; 11–12, subsp. *masatakasatoi*, Nakanoshima Is., ♂(holotype), ♀; 13–14, subsp. *tomokunii*, Amami-oshima Is., ♂(holotype), ♀; 15–16, subsp. *hamajii*, Tokunoshima Is., ♂(holotype), ♀.



Figs. 17–31. *Eterusia aedea* subspecies in Japan. 17–23, Subsp. *sakaguchii*, 17–18, Fungawa, N Okinawa Is., ♂♀, 19–20, Mt. Oppadake, C Okinawa Is., ♂♀, 21–22, Zamami Is., Kerama Group, ♂♀, 23, Tokashiki Is., Kerama Group, ♂; 24–25, subsp. *azumai*, Kumejima Is., ♂(holotype), ♀; 26–31, subsp. *okinawana*, 26–27, Ishigaki Is., ♂♀, 28–29, Iriomete Is., ♂♀, 30–31, Yonaguni Is., ♂♀.

Nanatsuyama in July and October in the daytime, and observed some more moths which flied like the females collected. I have never observed such a male flying over tree crowns in the daytime as those of *micromaculata* from Yakushima Is.

Eterusia aedea tomokunii Owada, 1989
(Figs. 13–14)

Eterusia aedea okinawana: Inoue, 1982, **1**: 292, **2**: 217, part, pl. 33.
Eterusia aedea tomokunii Owada, 1989, p. 202–203, figs. 6–7, 24, 37.

Distribution. Amami-oshima Island, the central Ryukyus.

Material examined. Type series of *Eterusia aedea tomokunii* Owada,1989 was examined, in NSMT. Amami-oshima Is.:— Mt. Yuwandake, 400m, 9 ♂ 2 ♀, 6–8. V. 1992, M. Owada & M. Kimura leg., 1 ♂, 31. X. 1995, M. Owada leg., Sumiyougawa, Riv. 250m, 2 ♂, 6–8.V.1992, M. Owada leg., 17 ♂ 5 ♀, 30–31. X. 1995, M. Owada & M. Kimura leg., ova on 2–4. XI. 1995, bred in ca. 12L, 151 ♂ 160 ♀, em. on 22. I.–6. II. 1996, bred in ca. 14L to 26. II. 1996, ca. 12L from 26. II., 33 ♂ 36 ♀, em. on 25. III.–30. IV. 1996, Santaro-toge, 450m, 6 ♂ 2 ♀, 6–8. V. 1992, M. Owada & M. Kimura leg., ova on 9–12. V. 1992, 11 ♂ 10 ♀, em. on 20. X.–13. XI. 1992, Setouchi, Hatsuno, 1 ♂, 1. XI. 1995, M. Owada leg., Yuwan, 1 ♂, 21. IV. 1954, J. Fukui leg, ELEU, Mt. Yuwandake, 1 ♀, 8. V. 1997, A. Oda leg., ELEU.

Notes. Smallest moth (length of forewing 19–30 mm in male, 19–30 mm in female). The ground colour of the forewing of this subspecies is reddish brown or dark green, darker than those of *micromaculata* and *masatakasatoi*. In the forewing, the median white band is margined with blue black in some specimen, and the outer white band is more reduced than that of *micromaculata*. The blackish margin of hindwing is broader.

Life cycle. Bivoltine.

Photoperiodism. Mature larvae diapause under a long daylength condition (14L10D) at 22–25°C in their cocoons.

Diurnal activity in adults. Males fly actively in the daytime, flying over tree crowns and searching for females. A few males were attracted to light traps. Females also fly in the daytime, but not so active as males.

Eterusia aedea hamajii Owada, **subsp. nov.**
(Figs. 15–16)

Distribution. Tokunoshima Is., the central Ryukyus.

Type series. Holotype, ♂, Japan, Ryukyus, Tokunoshima Is., Boma, 250m, M. Owada leg., ova 5–10. XI. 1992, em. 16. I. 1993. Paratypes. Tokunoshima Is.:— Imurogawa Riv., 2 ♂ 1 ♀, 30. IV. 1992, H. Hamaji leg., Mikyo, 150m, 5 ♂ 2 ♀, 31. X.–1. XI. 1992, M. Owada leg., Boma, 35 ♂ 9 ♀, 31. X.–1. XI. 1992, M. Owada leg., same data as holotype, 102 ♂ 108 ♀, em. 11–30. I. 1993, 19 ♂ 7 ♀, 2–3. XI. 1995, M. Owada leg., Mt. Inokawadake, 1 ♀, 25. XI. 1993, R. Imai leg.

The holotype and paratypes are preserved in the National Science Museum, Tokyo.

Diagnosis. A little larger than *tomokunii*. Length of forewing 20–30 mm in male, 27–32 mm in female. Ground colour of forewing reddish brown or dark green, sometimes intermediate, brighter than that of *tomokunii*. In forewing, white markings larger, median white band margined more broadly with

blue black, a series of black stripes at apex in most male specimens: in hindwing, median white band much broader, terminal black margin more tinged with blue, white band in the black margin broader.

Notes. This subspecies is intermediate between *tomokunii* from Amami-oshima Island and *sakaguchii* from Okinawa Island. In comparison with *sakaguchii*, the ground colour of forewing is more tinged with green; the white bands of wings are narrower; the blue black margin of the median white band of forewing is less developed; apical black stripes less developed.

Two males and one female of this population were collected first by Mr. H. Hamaji, to whom this subspecies is dedicated.

Life cycle. Bivoltine.

Photoperiodism. Mature larvae diapause under long daylength condition (14L10D) at 25°C in their cocoons (Miyata, unpublished).

Diurnal activity in adults. Males fly actively in the daytime, flying over tree crowns and searching for females. A few males were attracted to light traps. Females also fly in the daytime, but are not so active as males.

Eterusia aedea sakaguchii Matsumura, 1931
(Figs. 17–23)

‡ *Eterusia aedea* ab. *sakaguchii* Matsumura, 1927, p. 83, pl. 3, fig. 9, named as an abnormal form, unavailable.

Eterusia aedea f. *sakaguchii*: Matsumura, 1931, p. 988, fig., regarded as a geographical form, available.

‡ *Eterusia aedea okinawana* f. *sakaguchii*: Bryk, 1936, p. 208, infrasubspecific, unavailable.

Eterusia aedea okinawana: Inoue, 1955, p. 203, part; Inoue, 1982, **1**: 292, **2**: 217, part, pl. 33, figs. 8–9. Nec Matsumura, 1931.

Eterusia aedea sakaguchii: Owada, 1989, p. 203–204, figs. 8 (holotype) –10, 25–26 (male genitalia), 38 (female genitalia).

Distribution. Okinawa Island and the Kerama Group (Tokashiki Is. and Zamami Is.), the central Ryukyus.

Material examied. Holotype of *Eterusia aedea sakaguchii* Matsumura, 1931 was examined (Owada, 1989). Okinawa Is.:— Okinawa-shi, Ikehara, 1 ♂ 3 ♀, 13. XII. 2000, M. Kimura leg.; Gushikawa, Enobi, 2 ♂, 15. VI. 2000, S. Inada leg.; Ishikawa, Yamashiro, 8 ♂, 5. IV. 1996, 2 ♂, 9. IV. 1994, M. Kimura leg.; Ishikawa, Ishikawa-kogen, ova 10. IV. 1996, ex M. Kimura, 12 ♂ 11 ♀, em. 8–19. VII. 1996; Kin, 3 ♂, 9. IV. 1994, M. Kimura leg., 3 ♂ 1 ♀, 11. XI. 1995, M. Owada & M. Kimura leg., larva (7 mm) 5. V. 1994, M. Owada leg., 1 ♀, em. 3. VIII. 1994, ova 12. XI. 1995, 3 ♂ 2 ♀, em. 28. I.–2. II. 1996; Ginoza, Matsuda, 1 ♂ 1 ♀, 13. IV. 1995, M. Kimura leg.; Nago, Haneji, 200m, 2 ♀, 10. XI. 1995, M. Owada leg., ova 12. XI., 12 ♂ 28 ♀, em. 31. I.–6. II. 1996; Nago, Haneji Dam, 100m, 3 ♂, 29. VII. 1999, M. Owada leg.; Nago, Mt. Tanodake, 300m, 2 ♂, 8. V. 1994, M. Owada leg.; Motobu, Mt. Yaedake, 250m, 7 ♂, 8. V. 1994, M. Owada leg., 10 ♂ 6 ♀, 10. XI. 1995, M. Owada leg., ova 11–13. XI., 87 ♂ 92 ♀, em. 26. I.–25. III. 1996; Nakijin, Mt. Oppadake, 4 ♂, 30. X. 1987, K. Funahashi leg.; Nakijin, Mt. Oppadake, 200m, 5 ♀, 8. V. 1994, M. Owada leg., ova 18–22. V., 3 ♂ 10 ♀, em. 29. VII.–13. VIII. 1994, same locality, 6 ♂ 4 ♀, 6. XI. 1995, M. Owada leg., ova 7–9. XI., 12L12D, 32 ♂ 20 ♀, em. 23. I.–2. II. 1996, 14L10D till 26. II. 1996, 1 ♂ 2 ♀, em. 6–16. II.

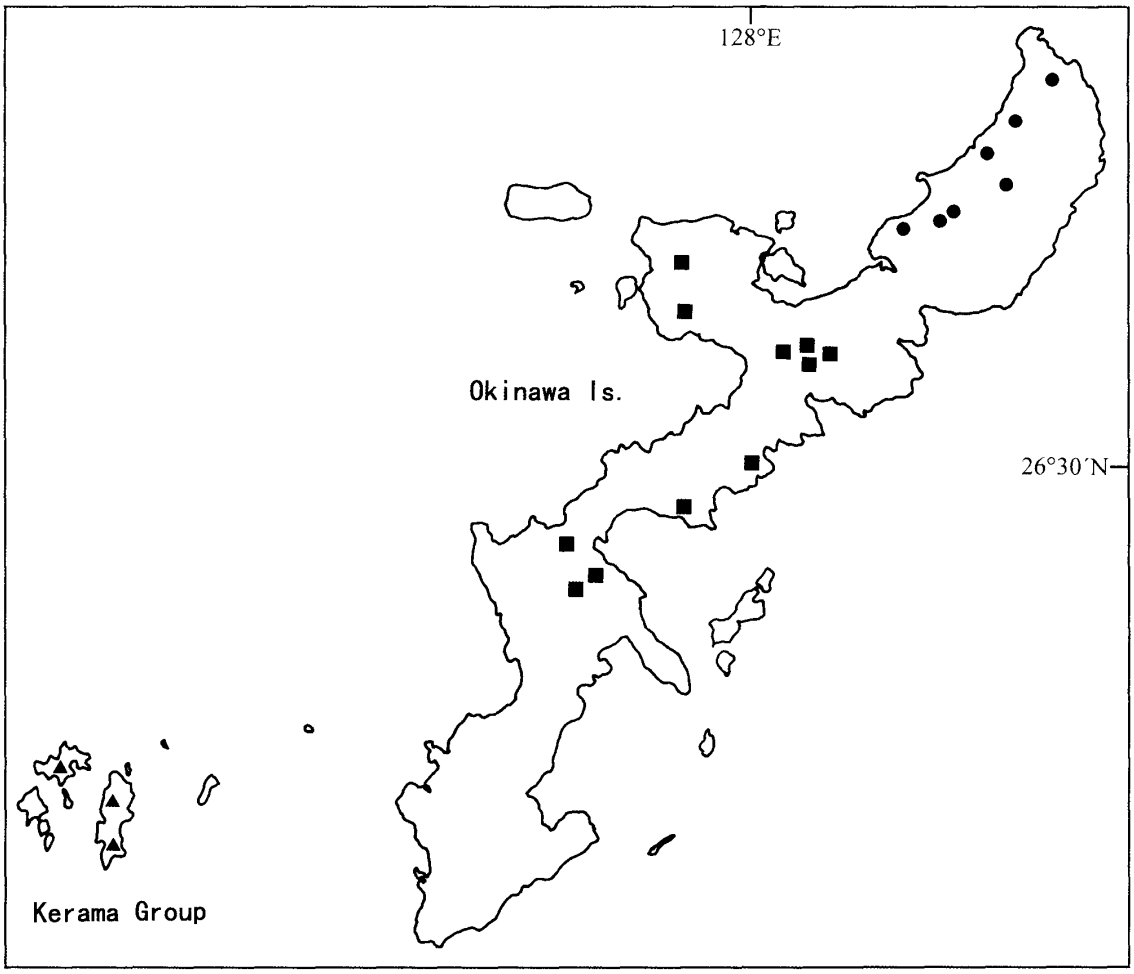


Fig. 32. Distribution map of *E. a. sakaguchii*. Circle, northern Okinawa populations; square, central Okinawa populations; triangle, Kerama populations.

1996, 18 ♂16 ♀, em. 25. III.–23. IV. 1996; Ogimi, Nuuha, 250m, 2 ♀, 4. V. 1992, M. Owada leg., 9. XI. 1993, M. Kimura leg., 2 ♂3 ♀, 9. IX. 1995, M. Owada & M. Kimura leg., ova 10–12. XI. 1995, 14L10D till 26. II. 1996, then 12L12D, 49 ♂72 ♀, em. 25. III.–8. IV. 1996, 12L under, 11 ♂19 ♀, em. 26–27. II. 1996; Kunigami, Hijigawa Riv., 1 ♂, 10. XI. 1995, M. Owada leg.; Kunigami, Mt. Yonahadake, 400m, 1 ♀, 19. X. 1991, N. Bito leg., ova 20. X.–15. XI., 15 ♂32 ♀, em. 30. XII.–29. I. 1992, 15 ♂4 ♀, 2–4. XI. 1991, M. Owada & H. Kobayashi leg., 4 ♀, 3–4. V. 1992, M, Owada leg., ova 7–9. V., 1 ♂, em. 17. VII. 1992, 8 ♂, 20–30. X. 1992, 1 ♂, 16. IV. 1991, Y. Okushima leg.; Kunigami, Okuni-rindo, 1 ♂, 12. X. 1990, H. Kobayashi leg., Kunigami, Fungawa, ova 1. XI. 1997, 12L12D, 24 ♂20 ♀, em. 5–17. I. 1998, 12.5L11.5D, 19 ♂7 ♀, em. 9–23. I. 1998, 13L11D, 12 ♂4 ♀, em. 23. I.–4. VI. 1998, 13.5L10.5D (12L12D from 3. III.), 15 ♂16 ♀, em. 6. IV.–1. V. 1998, 13.5L10.5D (12L12D from 12. V.), 5 ♂9 ♀, em. 20. V.–19. VI. 1998, 14L10D (12L12D from 12. V.), 7 ♂7 ♀, em. 19–28. VI. 1998. Kerama Group:— Tokashiki Is., Aharen, 1 ♂, 29–31. X. 1989, M. Owada leg., 1 ♂, 20. IV. 1993, M. Kimura leg.; Zamami Is., Mt. Takatsukiyama, 9 ♂1 ♀, 20. X. 2000, M. Kimura & M. Satô leg., ova 3. XI. 2000, 28 ♂20 ♀, em. 25. I.–10. V. 2001.

Notes. Length of forewing, 25–34 mm in male, 24–34 mm in female. A little larger than in

hamajii from Tokunoshima Island. This subspecies is characterized by the black margin of hindwing reduced, particularly in the female.

Life cycle. Bivoltine in northern part of Okinawa Island (April–May and October–November). In the central part of Okinawa Island, a few moths flied in August. There is a possibly of trivoltine. At Ikehara, Okinawa-shi, the southernmost habitat in Okinawa Island, moths were observed flying through a year (Kimura, per. comm.), and several specimen were collected even in December.

Photoperiodism. Mature larvae diapause under long daylength condition (14L10D) at 22–23°C in their cocoons.

Diurnal activity in adults. Males fly actively in the daytime, flying over tree crowns and searching for females. A few males were attracted to light traps. Females also fly in the daytime, but are not so active as males.

Eterusia aedea azumai Owada, **subsp. nov.**

(Figs. 24–25)

Distribution. Kumejima Island, 60km west of Okinawa Is., the central Ryukyus.

Type series. Holotype, ♂(Fig. 24), Japan, Ryukyus, Kumejima Is., Mt. Uegusuku (south), ova 24. IV. 1994, em. 30. VII. 1994. Paratypes. Kumejima Is.:— 1 ♂, 3. XI. 1978, S. Azuma leg.; Mt. Uegusuku (south), 150–200m. 10 ♂ 3 ♀, 27–29. IV. 1993, 7 ♂ 3 ♀. 29–30. IV. 1994, M. Owada & M. Kimura leg., ova 24. IV., 28 ♂ 25 ♀, em. 19. VII.–8. VIII. 1994; Shirasegawa Riv., 100m, 1 ♂ 1 ♀,, 30. V. 1993, M. Owada & M. Kimura leg.; Mt. Ara-dake, 100m, 2 ♂, 29. IV. 1993, 7 ♂ 7 ♀, 29–30. IV.1994, M. Owada & M. Kimura leg.

The holotype and paratypes are preserved in the National Science Museum, Tokyo.

Diagnosis. Similar to *sakaguchii* from Okinawa Island and the Kerama Islands. Length of forewing, 27–31 mm in male, 27–35 mm in female. Ground colour of forewing strongly tinged with gross; male hindwing more tinged with blue; outer black margin not so reduced, more tinged with blue.

Notes. Kumejima Island is a small island, lying 60km west of Okinawa Island, and is well known for the occurrence of several endemic insects, e.g., the Kumejima-Firefly, *Luciola owadai* Satô et Kimura, 1995, which was discovered in 1994 by my investigation on *Eterusia aedea*.

The subspecies *azumai* is characterized by the remarkably shining forewings, which are clearly different from those of *sakaguchii* from Okinawa Island.

A male of this population was collected first by Dr. S. Azuma, to whom this subspecies is dedicated.

Life cycle. Bi- or trivoltine.

Photoperiodism. Mature larvae diapause under long daylength condition (14L10D) at 25°C in their cocoons (Miyata, unpublished).

Diurnal activity in adults. Males fly actively in the daytime, flying over tree crowns and searching for females. A few males were attracted to light traps. Females also fly in the daytime, but are not so active as males.

Eterusia aedea okinawana Matsumura, 1931

(Figs. 26–31)

‡ *Eterusia aedea* ab. *okinawana* Matsumura, 1927, p. 83, pl. 3, fig. 11, named as an abnormal form, unavailable.

Eterusia aedea f. *okinawana*: Matsumura, 1931, p. 987, fig., regarded as a geographical form, available.

Eterusia aedea okinawana: Bryk, 1936, p. 208; Owada, 1989, pp. 206–207, figs. 11–14, figs. 27–28 (male genitalia), fig. 39 (female genitalia).

Eterusia aedea ishigakiana Inoue, 1982, **1**: 292, **2**: 217, part, pl. 33, figs. 10–11; Owada, 1989, p. 206, synonymy.

Distribution. The Yaeyama Group (Ishigaki Is., Irionote Is. and Yonaguni Is.), the southern Ryukyus.

Material examined. The holotype of *Eterusia aedea okinawana* Matsumura, 1931 and the type series of *E. aedea ishigakiana* Inoue, 1982 were examined (Owada, 1989). Ishigaki Is.:— Ishigakijima, 1 ♀,female, 16. XI. 1932, H. Ohshima leg., 3 ♂ 1 ♀, 5. IX. 1936, T. Iwasaki leg. (ELKU); Mt. Omotodake, Tozanguchi, 100m, 4 ♂ 9 ♀,19–21. III. 1991, M. Owada leg., ova 20–24. III., 96 ♂ 101 ♀, em. 1–10. VI. 1991; Mt. Omotodake, 1 ♀, 1. VII. 1964, Y. Hori & K. Hatta leg., ELEU, 1 ♂, 24. VIII. 1970, M. Chujo leg., ELEU,1 ♂ 1 ♀,, 26. VI. 1964, N. Ohbayashi leg., ELEU, 1 ♂, 25. V. 1991, 2 ♂ 1 ♀, 17. VI. 1995, M. Kimura leg., 3 ♂ 1 ♀, 17. VI. 1962, S. Asahina leg., Mt. Bannadake, 150m, 16, 18. III. 1991, 1 ♂, Mt. Bannadake, 4 ♂, 1. IX. 1978; Takeda, 1 ♀, 1. IV. 1968, Y. Arita leg., 1 ♂, 19. VII. 1987, T. Masaki leg. (ELKU); Takeda-rindo, 140m, 4 ♂ 4 ♀, 19. III. 1991, 3 ♀, 25–27. III, 1998, M. Owada leg., ova 26. III., 22–23°C, 12L12D, em. 1 ♀, 12. VI. 1998, 14L10D (from 1. VII. 1998), 9 ♂ 6 ♀, em. 29. VII.–22. VIII. 1998, 12.5L11.5D, 4 ♂ 2 ♀, em. 4–14. VI. 1998, 2 ♂ 1 ♀, em. 9. VIII.–6. IX. 1998, 14L10D (from 1. VII. 1998), 6 ♂ 8 ♀, em. 22. VII.–11. VIII. 1998, 13L11D, 16 ♂ 13 ♀, em. 2. VI. 13. VII. 1998, 13.5L10.5D, 24 ♂ 9 ♀, em. 3–14. VI. 1998, 14L10D, 13 ♂ 11 ♀, em. 7–14. VI. 1998, 1 ♂ 1 ♀, 1, 4. VIII. 1998; Urasoko-rindo, 120m., 2 ♂, 17, 21. III. 1991, M. Owada leg. Iriomote Is.:— Komi, 1 ♂, 11. IV. 1962, Y. Arita leg.; 1 ♂, Nakamagawa Riv., 21. VI. 1995, M. Sugimoto leg., 14. XI. 1995, M. Kimura leg.; Otomi, 1 ♂,12. II. 1998; Funaura, 3 ♂, 12–13. II. 1998; Yoshikeragawa Riv., 1 ♀, 10. X. 1995, M. Sugimoto leg.; Takana, 1 ♀, 8. XI. 1995, S. Inada leg., Hoshidate, 1 ♀, 17. XI. 1995, M. Kimura leg., ova 19. XI., 10 ♂ 6 ♀, em. 5–6. II. 1996, 15 ♂ 32 ♀, em. 11–20. III. 1996. Yonaguni Is.:— Mt. Urabudake, 180–230m, 9 ♂, 22–24. III. 1991, M. Owada leg.; Hikawa-rindo, 2 ♀, 9. VI. 1994, M. Sugimoto leg., ova 11–14. VI., 63 ♂ 70 ♀, em. 13–29. VIII. 1994; Iranda-rindo, 5 ♂ 1 ♀, 9–11. VI. 2001, M. Owada & M. Kimura leg.

Notes. In my previous paper (Owada, 1989), I included the southern part of Okinawa Island in the distributional range of subsp. *okinawana* with reservation on the basis of a very old specimen (1 ♂, Nawa [= Naha?], Okinawa, 28. VII. 1916, in NSMT) and a female record from Izumi, the Motobu Peninsula, central Okinawa Island (Nagayoshi, 1967, fig. 5). In the succeeding extensive investigations made by myself, however, I was unable to re-discover any specimen of *okinawana* from Okinawa Island, and found that *Eterusia aedea* does not occur in the southern part of Okinawa Island. Therefore, I have come to the conclusion that those two specimens were mislabeled.

Although some features overlap between populations, this subspecies can be divided into the following three subgroups:

1) Ishigaki Island (Figs. 26–27). Large moth (length of forewing: 33–37 mm in male, 33–37 mm in female). The ground colour of the forewing is green; the blue black margin of median white band of the forewing is weak or absent; the apical black stripes of the forewing absent; the black margin of the hindwing has shiny blue portion.

2) Iriomote Island (Figs. 28–29). Rather small moth (length of male forewing: 30–33 mm). The ground colour of the forewing is paler and more tinged with reddish brown; the blue black margin of the median white band of the forewing is weak or absent; the apical black stripes of the forewing is absent; the black margin of the hindwing has paler shiny blue portion.

3) Yonaguni Island (Figs. 30–31). Large moth (length of forewing: 32–36 mm in male, 37–39 mm in female). The ground colour of the forewing is green, somewhat deeper than that in the Ishigaki Is. subgroup; the black margin of the median white band of the forewing is developed, forming a black shade in the cell; the apical black stripes of the forewing is present in some specimens; the black margin of the hindwing has shiny blue portion.

Life cycle. Possibly quadrivoltine. Moths were observed flying through a year.

Photoperiodism. At 25°C, mature larvae do not diapause under any daylength condition in the population of Ishigaki Is. and 50–80 % larvae diapause in short daylength (10–12L) in their cocoons in the population of Yonaguni Is. (Miyata, unpublished). On the other hand, at 22–23°C, most of mature larvae diapause under short daylength condition (12–12.5L) in their cocoons in the population of Ishigaki Is.

Diurnal activity in adults. Males fly actively in the daytime, flying over tree crowns and searching for females. A few males were attracted to light traps. Females also fly in the daytime, but are not so active as males.

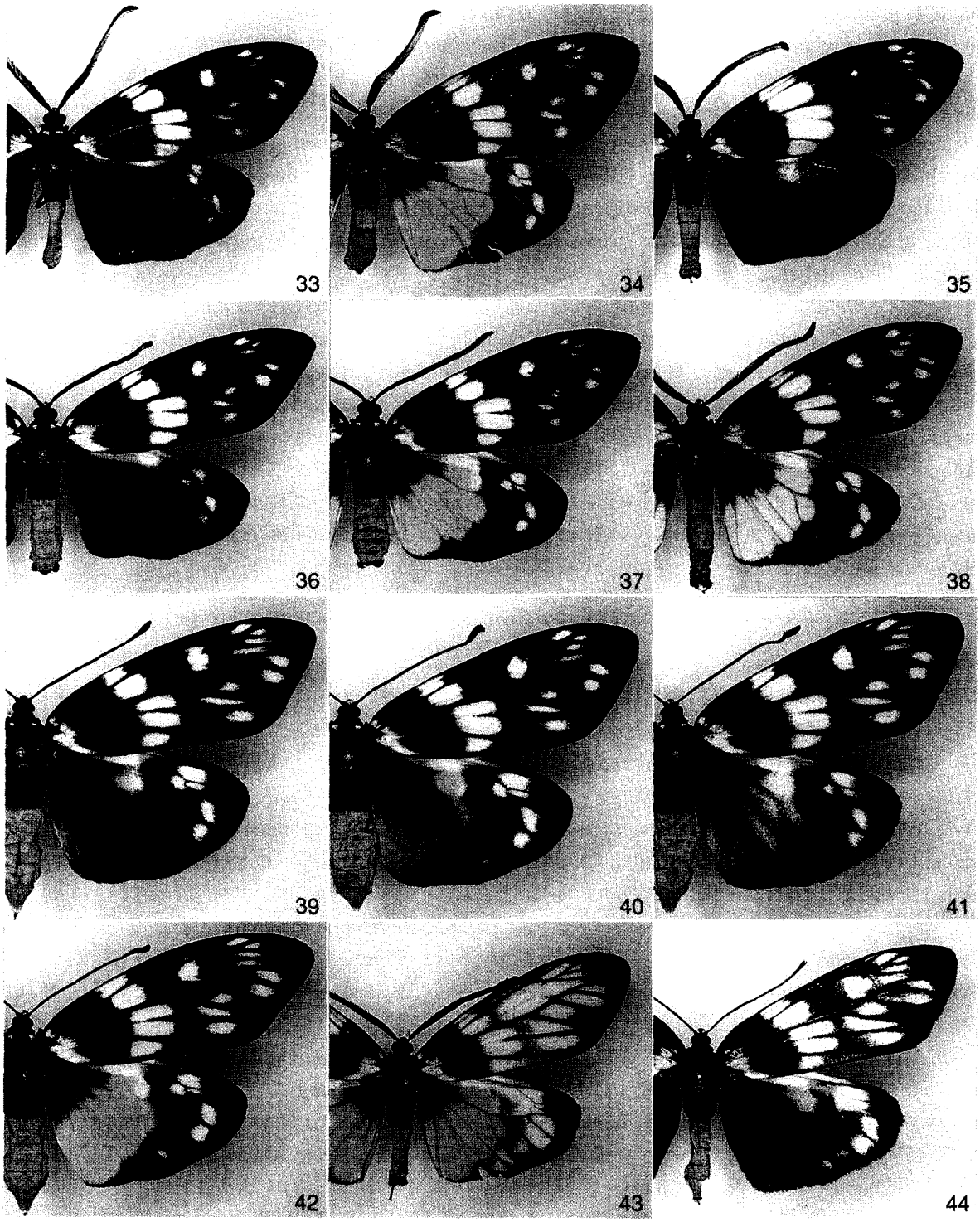
Eterusia aedea edocla Doubleday, 1847 (Indo-Chinese Populations)
(Figs. 33–44)

Heterusia edocla Doubleday, 1847, p. 469.

Eterusia aedea edocla: Jordan, 1907, p. 34, pl. 6; Owada, 1989, pp. 210–211, figs. 19–20, fig. 31 (male genitalia), fig. 41 (female genitalia).

Wing maculation of this subspecies is variable, and can be separated into the following three categories by the hindwing coloration: 1) mostly black (abbreviated B); 2) median band deep yellow (Y); 3) median band cream yellow (C).

Material examined. Myanmar:— Kachin, Putao. Mt. Nwe Zin, 750m, 2 ♂ B, 2 ♂ Y, 1 ♂ C, 16–20. VI. 1998, K. Yazaki leg., Putao, military base, 500m, 1 ♀ B, 1 ♀ Y, 27. VIII. 2000, Y. Watanabe leg.; Maymyo, 1 ♂ B, 5. V. 1983, A. Seto leg. Thailand:— Lampang, Maeto, 9 ♂ B, X–XI. 1989; Chiangmai, 1 ♂ B, 2. V. 1993; Chiagmai, Doi Pui, 1 ♂ B, 16. V. 1985, 1 ♂ B, 30. VII. 1984, 1 ♂ B, 3. X. 1989, 1 ♂ B, 9. XI. 1989, 1 ♂ B, 6. XII. 1989; Chiangmai, Doi Saket, 1 ♂ B, 28. X. 1989; Chiangmai, Doi Suthep, 1 ♂ B, 28. IX. 1989; Chiangmai, Mae Taeng, 2 ♂ B, 17. XI., 7. XII. 1989; Khao Yai, 1 ♂ B, 19–20. VII. 1966, Inoue & Okagawa; Loei, Phu Rua Natn. Park, 1,200m, 1 ♂ B, 21. VIII. 1987, M. Owada leg. Laos:— Samneua, 2 ♂ Y, VIII. 1991; Xiang Khoang, 1,200m, 1 ♂ B, 6. X. 1992. Vietnam:— Vinh Phu, Tam Dao, 1 ♂ Y, 7. V. 1994, 1 ♂ B, 2 ♂ Y, 1–3. VII. 1997, Y. Okushima leg., 1 ♂ Y, 22–26. IX. 1994, M. Owada leg., 1 ♂ B, 19–21. V. 1995, M. Owada leg., 2 ♂ B, 1 ♂ Y, 2 ♀ B, 2 ♀ Y, IV.–V. 2000, 10 ♂ B, 3 ♂ Y, 9 ♀ BY, 1 ♀ BC, 4 ♀ Y, 28. II. –28. III. 2000; Cao Bang, Nang Oa, 800m, 1 ♂ Y, 11. V. 1997, M. Owada leg.; Lai Chau, Phong Tho, 1,050m, 1 ♂ C, 9. V. 1995, M. Owada leg.; Lai Chau, Phong Tho, Deo Giang Ma, 1,230m, 1 ♀ BY, 10. V. 1995; Lai Chau, Tuan Giao, 650m, 1 ♂ B, 4–6. V. 1995, M. Owada leg.; Ha Tay, Ao Vua, 70m, 1 ♂ Y, 27. IV. 1995, M. Owada leg.; Son La, Truong Yen, 950m, 1 ♀ Y, 30. IV.–1. V. 1995, M. Owada leg.; Yen Bai,



Figs. 33–44. *Eterusia aedea edocla* in the Indo-Chinese Peninsula. 33–34, Myanmar, ♂ B, ♀ Y; 35, Thailand, ♂ B; 36–44, Vietnam, 36–38, ♂ B, ♂ Y, ♂ C, 39–42, ♀ B, ♀ BY, ♀ BC, ♀ Y, 43 white forewing, ♂ Y, 44, white forewing, ♀ B. B, black form; Y, yellow form; BY and BC, intermediate; C, cream yellow form.

200m, 1 ♂ C, 12 ♂ Y, 4 ♂ B, 18. V. 1995, M. Owada leg.; Bao Loc, 1 ♂ Y, 4. VII. 2000.

Notes. It is worth noting that all the male specimens collected in Thailand are the black hindwing type (n = 21) (Fig. 35). On the other hand, all the three types (black, yellow and cream) are found in Myanmar (n = 8) (Figs. 33–34), and in Vietnam (n = 68) (Figs. 36–44), though the cream yellow type is very rare. The population of Thailand seems to be isolated to some extent.

The moths in Vietnam is quite variable not only in the maculation of the hindwing, but also in that of the forewing. In the forewing, a male specimen from Yen Bai has the white bands broadened and fused, forming a very broad white band (Figs. 43–44), and a male from Tuan Giao, Lai Chau, has a blackish forewing by the reduction of the discocellular mark and the outer band. In the hindwing, there is a gradation from yellow to black in the median band (Figs. 39–42).

Life cycle. Moths were observed flying through a year.

Photoperiodism. Not studied.

Diurnal activity in adults. In Vietnam, I have never collected male moths of this subspecies in the daytime, most of the males collected were attracted to light traps, while females were collected in the daytime.

Discussion

Distribution. Moths of *Eterusia aedea* in the Japanese Islands are separated into eight subspecies in this paper. As in the distribution map (Fig. 1), they are clearly isolated from one another by the sea. Judging from my investigations, *Eterusia aedea* does not seem distributed in the following islands: Takarajima Is. of the Tokara Group, Okinoerabu Is., Yoronto Is., Iheyajima Is., 35km west of Okinawa Is., Miyakojima Is. All these are either very small or recent coral. The southern part of Okinawa Island is formed mainly by uplifted coral reef and the vegetation was heavily disturbed by human activities, and this moth does not fly there.

Life cycle. The subspecies *sugitanii* is univoltine, and this feature is unique among all the subspecies of *Eterusia aedea*. However, there are two specimens collected in June in the southernmost peripheries of distributional area, i.e., Otani, Tosashimizu of Shikoku and Shibushi of Kyushu. It is possible that those places form a transitional zone from uni- to bivolitine populations (Fig. 1).

The subspecies *micromaculata* from Yakushima Is., *masatakasotoi* from Nakanoshima Is., *tomokunii* from Amami–oshima Is., *hamajii* from Tokunoshima Is., and *sakaguchii* from Okinawa Is. are bivoltine. In Yakushima Is., most of moths appear from May to July and from September to October. In Amami–oshima Is. and Tokunoshima Is., summer blank of flying period is elongated. The populations of the northern part of Okinawa Is. are bivoltine, because no moths were collected in July and August. In the central part of Okinawa Is., however, a few moths were collected or qbserved flying in July and August. In addition to this, at Ikehara, Okinawa-shi, the southernmost habitat in Okinawa Island, moths are observed flying through a year, and several specimens were collected even at the middle of December. Further study is needed to clarify whether this area is a trivoltine or quadrivoltine zone, or not.

The subspecies *okinawana* from the islands of the Yaeyama Group should be quadrivoltine. Moths are observed flying through a year, though decreasing their number in the winter.

Photoperiodism. Moths of *Eterusia aedea* from Honshu to the northern part of Okinawa Island aestivate in the prepupal stage. Larvae bred in long daylength (14L) diapause after making cocoon, and are aroused by short daylength (12L).

On the other hand, *E. a. okinawana* from the Yaeyama Group shows reverse reaction in the photoperiodism to the other Japanese subspecies. Mature larvae, bred at 25°C, do not diapause under any daylength condition in the population of Ishigaki Is. and 50–80 % larvae diapause in short daylength (10–12L) in the population of Yonaguni Is. (Miyata, unpublished). In addition to this, most mature larvae, bred at 22–23°C, diapause in short daylength condition (12–12.5L), and are aroused by long daylength (14L) in the population of Ishigaki Is.

As was discussed above, some moths of the central part of Okinawa Is. do not aestivate, though their photoperiodism has not been studied yet.

Details of experimental data of the photoperiodism of *E. aedea* will be published in a separate paper.

Diurnal activity in adults. Because of the bright and beautiful coloration of wings, *Eterusia aedea* was considered a diurnal moth by many authors, and most of such large beautiful chalcosiine moths as *E. aedea* are in fact diurnal. However, I have never collected or seen any males of *E. aedea* in Nepal, India (Sikkim), Thailand, Vietnam and Taiwan in the daytime, though many males were attracted to light traps. Males of the Japanese mainland subspecies, *E. a. sugitanii*, are also nocturnal, never collected in the daytime.

On the other hand, male moths in the central and southern Ryukyu Islands fly quite actively in the daytime. They fly over tree crowns for searching for females, and never rest on leaves or twigs of tree crowns. This mating behavior of males is found also in the subsp. *micromaculata* from Yakushima Is., northernmost of the Ryukyus, though not so frequent. It is worth noting that males of subsp. *masatakasatoi* from Nakanoshima Is. of the Tokara Group are nocturnal, though Nakanoshima Is. lies between Yakushima and Amami-oshima Islands.

要　　約

オキナワルリチラシの日本での分布は，伊豆半島の湯ヶ島の孤立した個体群を東限とし，島根県の隠岐を北限にして，琉球列島にまで伸びる（Fig. 1）．国外では，台湾から中国，インドシナ半島，ヒマラヤ地方からインドを経て，スリランカにまで広く生息している．ヒマラヤからインドシナ半島にかけて分布する亜種*edocla*の斑紋は変異に富むことで知られているが，日本のものではそのようなことはなく，地理的に孤立した集団を作っており，亜種の関係を基準標本を調べて整理した（Owada, 1989）．本報告はその後の調査によって得られた標本や生態的知見を加え，再度，オキナワルリチラシの地理的変異について論じた．

Eterusia aedea sugitanii Matsumura　日本本土亜種

分布：伊豆半島，愛知県，紀伊半島，中国地方西部，隠岐，四国，対馬，筑前沖島，九州．大きく五つの集団に分けられる．1）伊豆半島；2）愛知県，紀伊半島，四国；3）広島市；4）隠岐，筑前沖島，対馬；5）九州．

年1化．若齢幼虫で越冬する．25℃の長日条件下（14L）で繭の中で終齢幼虫が休眠する．雄は昼間活動せず，灯火に飛来する．

Eterusia aedea micromaculata Inoue　屋久島亜種

分布：屋久島．

年2化．若齢幼虫で越冬する．雄は昼間，樹冠部を飛び，探雌行動をとるが，灯火にも多数が集まる．

Eterusia aedea masatakasatoi Owada　トカラ列島中之島亜種

分布：中之島（トカラ列島）．屋久島のものに似るが少し大型，前翅の緑の地色は少し明るく，白い外横線は太く，後翅中央の白帯は幅広い．

年2化．雄は昼間活動せず，灯火に飛来する．

Eterusia aedea tomokunii Owada　奄美大島亜種

分布：奄美大島．最も小型の亜種．地色は暗くなり，後翅の黒い外縁は幅広い．

年2化．22－23℃の長日条件下（14L）で繭の中で終齢幼虫が休眠する．雄は昼間活発に樹冠部を飛びまわり，探雌行動をとる．

Eterusia aedea hamajii Owada　徳之島亜種

分布：徳之島．斑紋は奄美大島亜種と沖縄島亜種の中間的である．奄美大島亜種よりは大きく，斑紋の輝きが増す．沖縄島亜種よりは，前翅の地色が強く緑色を帯び，横線の青黒い縁と翅頂部の黒線の発達は弱い．

年2化．25℃の長日条件下（14L）で繭の中で終齢幼虫が休眠する．雄は昼間活発に樹冠部を飛びまわり，探雌行動をとる．

Eterusia aedea sakaguchii Matsumura　沖縄島亜種

分布：沖縄島（北部・中部），ケラマ諸島（座間味島，渡嘉敷島）．本亜種は後翅の外縁の黒帯が縮小し，とくに雌でその傾向が強くなる．

沖縄島北部では年2化を保っていると思われるが，本部半島から中部では8月に飛ぶ個体が少ないながら見られ，最南限の沖縄市池原では，八重山亜種のように1年中飛翔個体が観察されている．22－23℃の長日条件下（14L）で繭の中で終齢幼虫が休眠する．雄は昼間活発に樹冠部を飛びまわり，探雌行動をとる．

Eterusia aedea azumai Owada　久米島亜種

分布：久米島．沖縄亜種に似るが，前翅表面が強く光沢を帯び，後翅の青い輝きも鮮やか．

年2化以上している．25℃の長日条件下（14L）で繭の中で終齢幼虫が休眠する．雄は昼間活発に樹冠部を飛びまわり，探雌行動をとる．

Eterusia aedea okinawana Matsumura　八重山諸島亜種

分布：八重山諸島（石垣島，西表島，与那国島）．国立科学博物館にある古い標本（1♂，ナワ，沖縄，28. VII. 1916，久保猪之吉コレクション）と，採集記録（永吉，1967，fig. 5）があり，沖縄島南部を疑問符付きで分布域に含めたが（Owada, 1989），その後の精査の結果，本亜種が沖縄島に分布することはないとの結論に至った．分布する3島の個体群は，それぞれ少しづつ斑紋等が異なっている．

通年，発生がみられ，年4化はしているものと考えられる．25℃で，石垣島のものは日長条件に左右されずに非休眠．また，与那国島のものでは短日条件(10–12L)で50–80%が休眠する．一方，石垣島のものを22–23℃で飼育すると，ほとんどすべての個体が短日条件(12–12.5L)で休眠してしまう．雄は昼間活発に樹冠部を飛びまわり，探雌行動をとる．

Eterusia aedea edocla Doubleday　ヒマラヤ・インドシナ亜種

後翅の斑紋が多型（黒色型，黄色型，淡黄色型）になることで知られる．インドシナ半島のミャンマー，タイ，ラオス，ベトナムの標本を記録した．タイのものはすべて黒色型．それ以外の地域では3型がすべて出現するが，淡黄色型は少ない．この中でも，ベトナムのものがとくに変異が大きく，前翅の白帯が拡大して，全体が白くなるものがあり，また，後翅の斑紋も黒色型と黄色型の中間的なものもでる．

ベトナムで採集した雄は，すべて灯火採集で採集したものであり，この亜種の雄は日本本土亜種と同様に夜行性である．

オキナワルリチラシは日本では8亜種に分かれ，それぞれは海によって隔離されている．なお，これまでの調査から以下の島には生息していないと思われる：宝島，沖永良部島，与論島，伊平屋島，宮古島．これらの島は，島自体が小さいか，隆起珊瑚礁の島である．また，生息が確認できなかった沖縄島南部も隆起珊瑚礁地帯で，植生の人為的撹乱がはげしい地域である．

日本本土亜種はオキナワルリチラシの全亜種の中で，唯一，年1化である．しかし，四国と九州の南縁で6月に成虫が採集されており，屋久島亜種からの2化帯への移行帯があるのかもしれない．2化帯と多化帯（4化帯）の移行地帯は沖縄島中部に見られるが，光周性を含めた精査が必要である．

1化帯と2化帯のものは，長日条件で休眠するが，4化帯の八重山諸島亜種は短日条件(12–12.5L)で休眠するか，非休眠となり，光周反応が逆転する．

オキナワルリチラシの雄は，本来は夜行性であるが，奄美大島亜種から八重山諸島亜種までのものだけは昼行性となり，活発に樹冠部を飛び回り，探雌行動を続ける．屋久島亜種の雄では，この探雌行動が観察できたが，それより南に位置するトカラ列島中之島では，夜間採集では多数の雄が得られたにもかかわらず，昼の活動を見ることはできなかった．

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